

## **Efficiency in Controlling Activities**

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<p>Controlling is essential for financial success of corporations. An efficient controlling system should be implemented in order to manage financial performance from income, expense to profitability. The purpose of the thesis is to provide insight knowledge towards corporate accounting management as well as to propose potential improvement for the existing controlling system of the case company, which is Bosch Rexroth Japan.</p> <p>The theoretical framework creates the knowledge foundation for readers to expose to all of the relevant management accounting concepts, terminology and ICT supporting systems. This part aims at supporting the current controlling system analysis at Bosch Rexroth Japan. Based on the academic knowledge, understanding towards the existing controlling activities will be deepened and improvement for the system can be more accountable and reliable.</p> <p>The controlling activities analysis is established by examine the current system and the software (SAP and Excel) utilized. Additionally, evaluation for the efficiency in controlling system will be also carried out from personal author study as well as interview with manager from finance department.</p> <p>The outcome of this thesis is expected to provide practical knowledge and develop critical thinking for readers; and to suggest recommendations for improvement towards current controlling activities of Bosch Rexroth Japan.</p>	
<b>Keywords</b> Management accounting, Controlling, Financial Data, Cost Tracking, Profitability Analysis, Sales Reporting, Financial Reporting, Efficiency, SAP, Excel Financial Management	

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## **1 Introduction**

### **1.1 Background to thesis topic**

The recent increase in global competitiveness has enabled international and local business to innovate and grow. Business and organizations, regardless of the enterprise size, encounter new and continually changing set of decisions. As a matter of fact, majority of these decisions are based on accounting information. Therefore, as long as managers understand data-driven decisions generate impact on corporate revenues and expense, decision-making process and result will be more efficient. (Horngren, Sundem, Burgstahler & Schatzberg 2014, 22)

One more basic purpose of accounting is to support management level plan and control corporate operation. While planning is the foundation of all business activities to achieve the objectives, controlling plays a significant role in implementing plans and evaluating the business performance on the way of achieving the goal. In order to maximize the efficiency and the accountability, corporations design and implement accounting system in order to generate useful relevant financial data for business development. (Horngren et al. 2014, 23)

It cannot be denied that management accounting play a critical role in corporations. An efficacious accounting system allows business to easily manage financial data and operating performance that will eventually lead to right and accountable operating decisions. Inspired by the efficient controlling system of Bosch Rexroth Japan, the thesis will introduce the company's current controlling system with three prominent activities: sales reporting, cost tracking and profitability analysis. From there, discussion and recommendation will be brought up for potential future improvement.

### **1.2 Research Objectives, Research Questions and Investigative Questions**

As one progress in the journey of management accounting study and career development, he/she grows from the starting point as understanding an existing accounting systems to creating/improving systems that can generate useful financial data to the particular requirements. This research aims at creating the connecting bridge between the mentioned stages for expertise advancement.

As the vital importance of management accounting/controlling has been highlighted, management accounting activities at Bosch Rexroth Japan will be introduced and examined further in order to evaluate and potentially improve the current system along

with provided academic accounting knowledge. The research question of this thesis is therefore decided as following: **How has an efficient controlling system leverages Bosch Rexroth Japan's performance?**

And it is divided into three following investigative questions:

IQ1: What are the main responsibilities of controlling department?

The purpose of this opening investigative question is to introduce basic information regarding controlling activities. From this questions, readers have the opportunity to have an overview towards the finance and controlling department. Among the responsibilities, three main tasks will be selected and brought to deeper study and discussion.

IQ2: How are the three main responsibilities functioning?

This question will confirm the essential role and their function of management accounting/controlling towards the corporate financial performance. Based on academic sources and practical observation/interview at the case company, readers can acquire better understanding about how management accounting works and influences corporate performance.

IQ3: What improvement suggestions can be given to the company?

Based on the academic knowledge, collected practical experience/observation and consultation from Bosch Rexroth Japan, possible improvement for the existing controlling system will be suggested. This also confirmed the mentioned connecting bridge for expertise advancement has been successfully built.

### **1.3 Case company – Bosch Rexroth Japan**

Bosch Rexroth Corporation is wholly owned subsidiary of the Bosch Group (headquarter in Stuttgart, Germany). The engineering firm at the moment is the world's leading specialist in the field of "Drive and Control" technology, which is also the corporate slogan. Bosch Rexroth Corporation operates over 36,500 including production associates in 25 countries and sales associates in 80 countries (Bosch Rexroth 2014.)

Bosch Rexroth Japan is considered as one of the most important branch of the Bosch Group in Asia. Besides Bosch Rexroth Japan, the corporation is also known as Drive and Control Japan (DCJP). They locate headquarter in Tokyo, main factory in Tsuchiura city, and other branch offices all over Japan (Osaka, Yokohama, Fukuoka etc). Although Tsuchiura might locate in the area where earthquakes occur quite often, it provides big

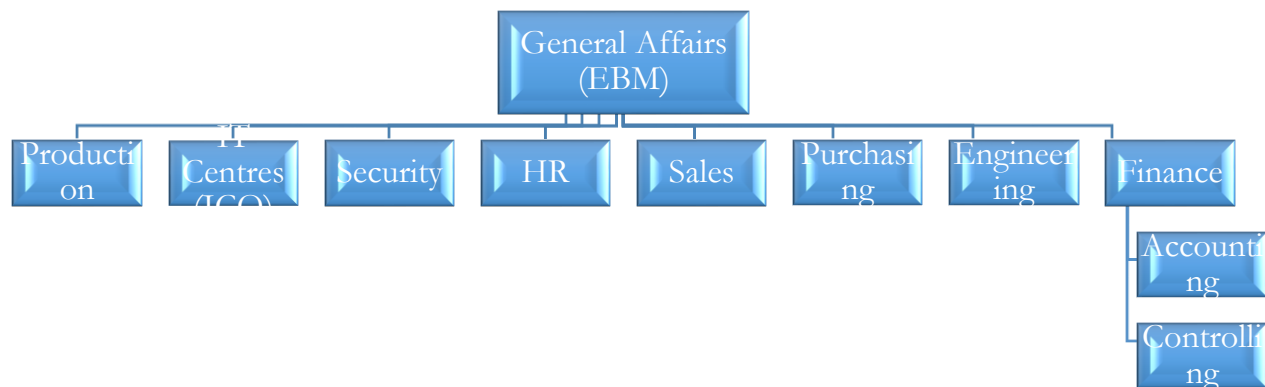
advantage for corporation on logistic purposes. As Tsuchiura locates in the middle of Tokyo capital and Mito city. Mito is also the central location with moderate offset towards the coast, which makes it one important seaport of Japan (Bosch Rexroth 2014.)

In 1934, Udachi Works was founded with the mission to become the largest hydraulic specialist. In 2005, Robert Bosch and Rexroth Corporation were integrated. Six years later, Udachi also joined the two companies to form Bosch Rexroth Corporation in Ja-pan. The current factory of Bosch Rexroth in Tsuchiura was also built by Udachi in 1962 (Bosch Rexroth 2014.)

The internship was done at the controlling department in Tsuchiura factory that located in Ibaraki prefecture. They employ at the moment 650 people internationally. However, the majority belongs to local Japanese. In 2013, the sales revenue reached 23.5 billion yen (173.46 million euros) (Bosch Rexroth 2014.)

### Organization Chart

Figure 1. Organization Char



### 1.3.1 Bosch Rexroth Map

Figure 2. Bosch Rexroth World Map



### 1.3.2 Customers of Bosch Rexroth

With the production associates spread over 25 countries along with sales offices over 80 countries, Bosch Rexroth possesses strong market share within industrial automotive segment with customers worldwide.

According to 2013's figures, the corporate sales record reached 5.7 billion euros, in which 3.4 billion euros is from Europe, 1 billion euros from America, and 1.3 billion euros from Asia and other countries. For DCJP alone, 2013 marked the year the company reached 173.46 million euros in sales revenue, which accounts for approximately 13.3% of Asia/Pacific/Africa regional revenues.

Figure 3. Bosch Rexroth's Sales.



#### 1.4 Demarcation

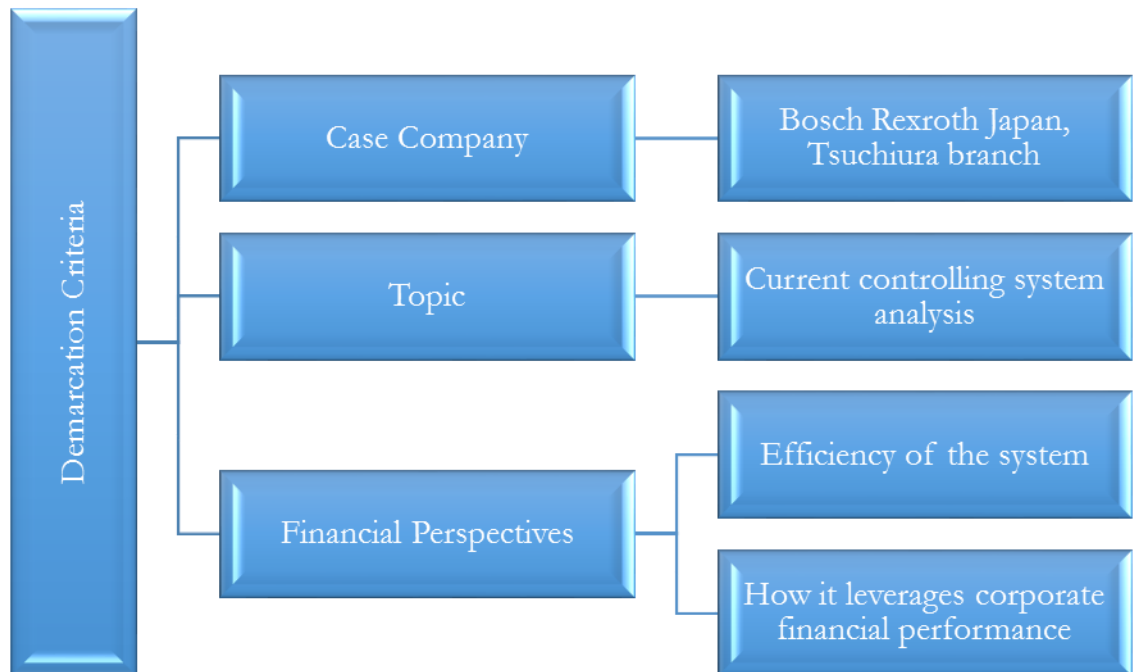
The purpose of the thesis is to highlight the importance of an efficient controlling system towards corporations based on Bosch Rexroth Japan's example. Because controlling consists of a wide range of activities which cannot be covered and deepened together at once, the thesis will only focus on the aspects of three prominent activities at Bosch Rexroth Japan. They are Sales Reporting, Cost Tracking and Profitability Analysis. From the financial perspectives, evaluation and recommendation for the current controlling system will be concluded.

Based on purposes, accounting is divided into two aspects: management accounting and financial accounting. While financial accounting provides data for external parties such as investors, banks, government agencies; management accounting produces information for internal purpose. Besides decision-making, management accounting information is also used for planning and controlling the organization's operation. This thesis will put the focus on some controlling activities.

The thesis concentrates on mere controlling tool and system. Therefore, no financial data is be involved.



Figure 4. Demarcation Criteria



### 1.5 Benefits to stakeholders

There are three kinds of stakeholders that can benefit from this thesis. The outcome of this report is expected to have beneficial impact on the future interns/trainees, controlling department team/managers, and the author.

The analysed controlling activities are mainly responsibilities of interns/trainees, the thesis can help them adapt and understand the system faster and deeper with academic knowledge, explanation and discussion. The thesis can also be used as controlling task manual for the interns/trainees.

More importantly, the evaluation and recommendation are exclusively aim at supporting managers and current controllers to have deeper academic understanding their current systems and from then potential improvement can be made. Together with the academic accounting knowledge, development can be made either directly based on author's recommendation or from the new financial perspectives that the thesis provides.

This thesis also gives the author a great amount of benefit. As one progress in the study and career of management accounting, he/she advances from understanding the existing accounting system to creating/improving systems that can produce useful data particular requirements and for a variety of purposes. As mentioned before, this thesis is expected to become the bridge connecting those two stages. In the end, the proficiency and

understanding required to evaluate the accounting systems will be developed. This thesis then becomes a milestone marked the author's personal development from school theoretical knowledge to company practical experience.

## 1.6 Key Concepts

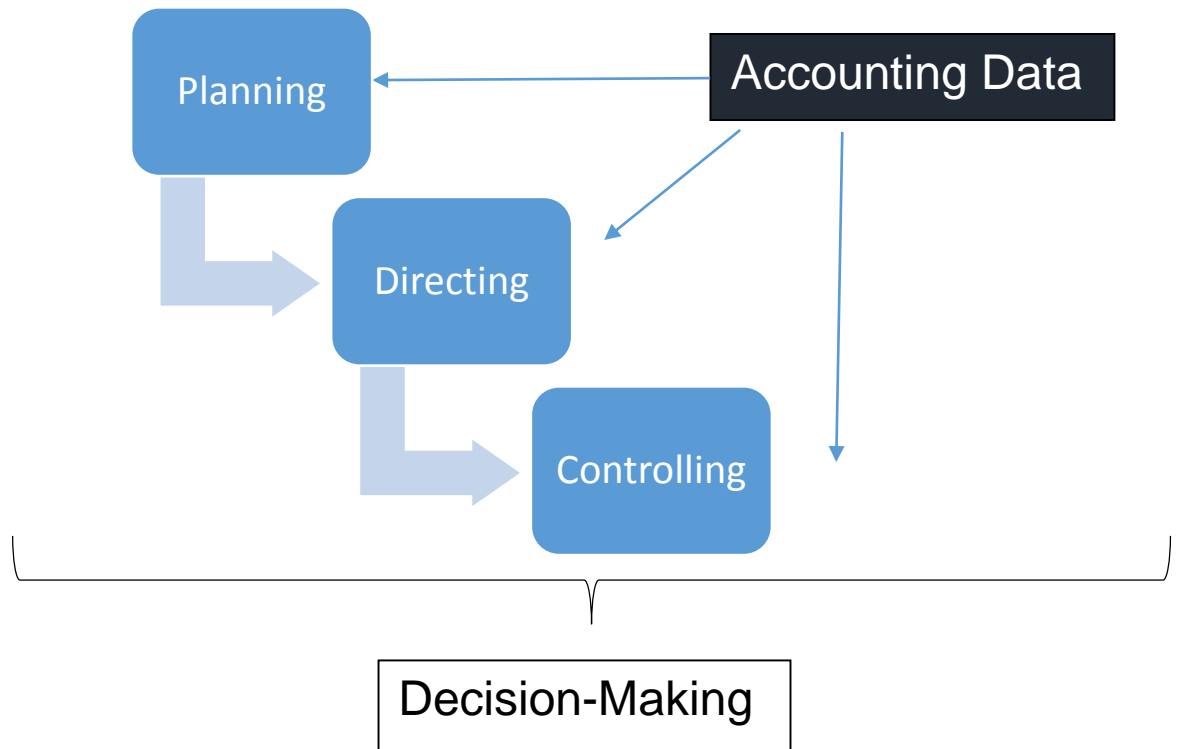
There are two approaches in this thesis: theoretical and practical. While theoretical approach leads customers to the topic with sufficient academic accounting knowledge (background of management accounting, technical terms and key concepts), the practical part helps readers understand the controlling responsibilities better and encourages financial critical-thinking development. There are a variety of titles in management accounting functions. Controllers are mainly in charge of operating matter such as aiding management decision making. In small companies, controller and treasurer can be combined. Otherwise, it is better to differentiate two positions.

Table 2. Accounting Division

Controllershship	Treasurership
Planning For Control,	Provision Of Capital
Reporting And Interpreting,	Investor Relations
Evaluating And Consulting,	Short-Term Financing
Tax Administration,	Banking And Custody
Government Reporting,	Credit Management And Cash Collections
Protection Of Assets,	Investments
Economic Appraisal	Risk Management

Management accounting play a significant role in decision making and corporate management. It is the primary means of implementing planning for control, reporting/ interpreting, evaluating and consulting as well as giving advice and support for budgeting, pricing and making other special decisions. Meanwhile, decision makers in all functional departments of a corporation are required to have understanding for the accounting data that they are using in their decisions and the incentives that accounting systems provide (Hornrgren et al. 2014, 32.)

Figure 5. Managers' Responsibilities



For internal development purpose, managers utilize accounting information for making short-term planning and control decisions, for making special or non routine decisions, for establishing general policies and long-range plans. On the other hand, external users such as investors and regulators make investment decisions and regulatory rulings thanks to published corporate financial statements (Horngren et al. 2014, 34.)

A company's value is composed of corporate activities that create values and allow company to gain competitive advantage. Throughout the company's value chain, accountants gather, analyze and report financial data such as expense and profit for decision-making management level (The Economic Times 2015.)

As mentioned, there are three practical controlling activities that will be examined deeply in this thesis taken Bosch Rexroth Japan as the case company. They are **sales reporting, cost tracking** and **profitability analysis**. They represent the basic financial flow of any company regardless of the size: income, outcome and operating profit.

### 1.7 Structure of thesis

The thesis follows the typical table of content of regular theses. In Chapter 1, thesis topic and other relevant aspects such as background, research questions, commissioning company, demarcation, potential benefits to stakeholders and key concepts. The following

Chapter 2 began with the theoretical framework, which is the academic foundation for analysis. In the theoretical framework, sufficient general accounting knowledge such as terminology, accounting operating system and key concepts will be provided. However, specific theory will be further mentioned and studied in Chapter 2 before sectional analysis.

In following Chapter 2, research questions will be concluded through investigative questions. Question 1 will be mainly answered by author's experience and observation during the internship. It provides readers the general picture of controlling department in company with their typical responsibilities. Along with that, theory is also provided to support readers' accounting knowledge. On the other hand, question 2 requires support and interviews from Bosch Rexroth in order to reach the insight expertise's opinions. Based on the collected information and analysis from Question 1, readers get to understand better how controlling has leverages corporate performance and its critical role towards organization's operation.

The thesis is concluded by Chapter 3, which highlighted the efficiency in the current controlling activities and how it has influenced the financial performance at Bosch Rexroth. In this part, the outcome of this thesis which is the recommendations for potential improvement is also discussed and analysed.

## 2 Theoretical framework

### 2.1 Key Concepts Definition

This chapter is dedicated to theoretical knowledge that will provide readers all of the relevant accounting concepts that will be discussed later on in the report.

**Controllable cost** is the one that management level has decisions and actions that can influence to a certain extent. On the other hand, an **uncontrollable cost** is defined as when the managers cannot have reasonable impact within a given time period. For example: Dow Chemical might consider the crude oil as uncontrollable cost due to the fact of the inability to control the market price of crude oil. However, the company can consider labor costs as controllable regardless of other factors such as labor union or labour usage etc...Controllable and uncontrollable concepts are used when there is a need for management performance evaluation. The cost tracking system at Bosch focuses on both controllable and uncontrollable cost in order to have agile solution towards company budgets. (Horngren et al. 2014, 378)

**Cost center** is defined as one responsibility center in which managers are in charge of mere cost. There can be either one or many cost centers for the entire department. In Bosch Rexroth, one department contains a number of cost centers depending on the size of the department. There are number digits in the cost center code at Bosch Rexroth, while the first three digits show the functional area of that cost element whether it is from sales, production or R&D etc...(Horngren et al. 2014, 378)

**Cost element** illustrates a specific activity/function within the corporate departments. For example: employee salary can be listed as one basic cost element in each department while production material is one essential cost element of production department. Cost element code contains 10 number digits that also allows users to know which department and product it belongs to (Business Dictionary 2015.)

Cost centers are responsibility centers in which managers are merely in charge of cost. One department can have one or several cost centers. In DCJP, cost center code contain 5 number digits.

Corporate cost can be direct or indirect with reference to a particular cost object. **Direct cost** refers to the costs that can be specifically and exclusively identified with a given cost object. The most common types of direct cost are usually components and materials included in the product. One essential characteristic of direct costs is that accountants can

easily physically identify the amount of the cost that relates to the cost object. On the other hand, **indirect cost** cannot be specifically and exclusively identified with a given cost object. Therefore, accountants cannot physically identify the indirect costs that relate to the given cost object. For example: direct cost of a house can be the building material such as wood, clay or bricks etc. On the other hand, the indirect cost can be the workers' salary, energy and depreciation on building equipment. (Horngren et al. 2014, 144)

Cost of labour can be brought to consideration in order to provide further illustration regarding the distinction between direct and indirect cost. When employees work specifically to produce the particular products, the labour costs are direct. However, other employees such as supervisors, managers, controllers, security staff who do not work directly to produce the products are considered as indirect labour costs. Back to 1900s, majority of labour costs were direct because labour-intensive production process is in most companies and workers had direct involvement with producing the products. Nowadays, automated production has changed the situation and eliminated many hands-on jobs, the majority of labour costs is indirect. (Horngren et al. 2014, 145)

Companies usually use **cost allocation** in order to assign indirect costs to cost objects in proportion to the cost object's use of a particular cost-allocation base.

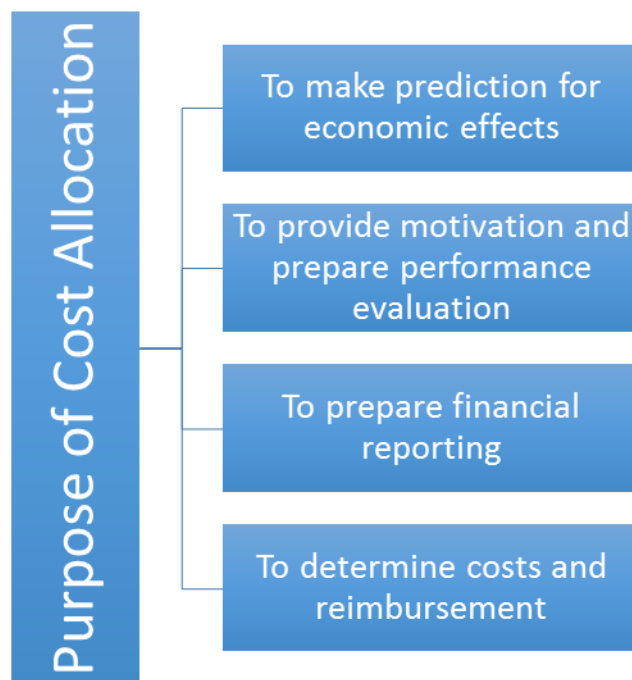
It is important that decision makers stay cautious in using cost allocation. When measuring how much cost one cost object cause, allocated costs become relevant for several reasons. As soon as the allocation is not related to the cost caused by cost objects, management level has the right and reason to cast doubt on the accuracy of resulting costs.

Regarding cost allocation, there are two types of cost which is known as **primary cost** and **secondary cost**. Primary cost refers to the original total cost of the company, while the secondary cost is the allocated primary cost into departments. For example: at Bosch Rexroth, material cost does not belong exclusively to production department although it is the only department that purchases material. The cost will be allocated into department with appropriate calculated ratio, which is also called secondary cost.

### **Purpose of Cost Allocation**

The logic that should be used for allocating depends on the purposes of the cost allocation. In other words, there is no universally best cost allocation system that firms can rely on. It is advisable to put the focus more on general concepts that build guidance for managers design the suitable systems. (Horngren et al. 2014, 144)

Figure 6. Purpose of Cost Allocation



In Management Accounting, **fixed cost** refers to the expense that is independent of sales volume within the relevant period. For example: the company has to pay for rent, machinery, buildings regardless of sale. On the other hand, **variable cost** is defined as cost that dependent on sales volume. Generally variable costs increase/decrease relative to sales volume at a constant rate. For example: personnel wages, energy cost, material cost etc. (Economics Fundamental Finance 2015.)

One of the most important responsibility of controlling is to help managers understand cost behavior. Cost behavior refers to how the activities of an corporation can influence its expense. For example, how much cost does Finnair incur when it opens new straight flight to Vietnam? What does it cost for Bosch Rexroth Japan to develop new lines of automotive products? How will an increase in Finland's foreigners' population have impact on automotive market? These are all specific examples of the big question: What is the incremental impact when there's a change in corporate activities?

According to AccountingTools, a cost driver is defined as a factor that have direct impact in the cost of a business activity. It is a measure of activities that generates requirement for the use of resources and thereby leads to cost. For example: in the R&D function, salaries of personnel is considered as resource cost and cost driver can be the number of new product requests or the complexity of those requested products (Accounting Tools 2015.)

In accounting, cost is classified as fixed or variable depending on whether the cost changes with respect to a certain cost driver. Variable cost illustrates the expense that varies with output. Variable costs usually changes in direct proportion to changes in the cost driver level. On the other hand, fixed cost is defined as expense that is independent of output. Changes in cost driver do not influence a fixed cost within a relevant range. Relevant range is Examples of fixed cost includes rent, facilities, buildings etc...

Although the "fixed cost" term illustrates the behavior of cost with respect to the cost driver, it still can change due to other factors. For example, heating costs are usually independent of production volume cost driver, it can change due to the decrease/increase of energy market price or condition of current weather/seasons.

### **Complicating Factors for Fixed and Variable Costs**

#### **Fixed Cost**

Although fixed costs are described as independent regardless of cost drivers' changes, it is only valid within limits. For examples, rent costs for production factories are usually fixed within a limited range of activity but it can still increase given that the production activities rise enough to exceed current rental space and require more space. It can also be the other way around when production drops so drastically that it allows the factory to rent less space. The relevant range refers to the limits of the cost-driver level within which there is a valid specific relationship between expense and cost drivers. For example: Suppose that total monthly fixed costs of Toyota is 500,000 euros if production is between 20,000 to 40,000 cars per month. However, if the production drops under 20,000, it will also reduce fixed costs to 400,000 euros per month. On the other hand, if the production rise above 40,000 product units, additional expense regarding rent or facilities will boost the fixed cost up to 600,000 euros per month. (Horngren et al. 2014, 60)

#### **Variable Cost**

The obvious importance of relevant range towards corporate fixed cost has been illustrated, but the corresponding idea may also arise for variable costs. For example: variable labour cost per car can drop dramatically if there is significant increase in production that leads to new innovative production process with highly-improved labour efficiency.



## **2.2 Accounting system**

### **2.2.1 Excel**

Microsoft Office Excel was designed exclusively in order to support accounting activities such as calculating reporting, budgeting, preparing financial statements etc. It consists a wide range of spreadsheet functionality and functions for complex calculations. On the other hand, it also integrates with external data from other accounting software in order for users to import and export information.

Performing calculations through formulas is one basic accounting task. Excel spreadsheet can store financial data in a tabular format that aims at supporting both in-line and summation calculation. There are several formulas that are applied in three mentioned controlling activities. Especially, charts and graphs are also supported and it can be connected to other Microsoft Office such as Word or Power Point, making it easier to perform corporate activities.

It becomes one efficient solution when Excel provide the ability to import data from many other different data sources. It allows users to pull sales, expense data from for example SAP or other sources into one central workbook in order to maximize the efficiency in accounting activities (Doe 2015.)

At Bosch Rexroth Japan, there are several formulas that are applied in the controlling activities. There are two main functions that help reporting and tracking financial data, which are SUMIFS and VLOOKUP.

### **2.2.2 SAP**

#### **Background of SAP**

Nowadays, the responsibilities of accounting is not limited to only bookkeeping and controlling. The department has to not only streamline financial processes but also provide analysis and reports in order for management level to keep track with the costs and profitability of different business units and activities. On the other hand, it is essential to keep the balance between internal expectations and the demanding compliance expectations from governmental and regulatory authorities (Patel 2012, 27.)

As a matter of course, these difficulties increase significantly as corporations expand their operations and market. However, the accounting systems are usually not immune to these

expectations. It is believed that they have to encounter equally similar challenges as in operation and competitive markets but with much less resources. Therefore, there had been a need among these companies for an accounting system that can satisfy their current business environment as well as can provide a strong foundation for potential challenges in a long run (Patel 2012, 27.)

Back in the early 1970s, a small company called "Systems Applications and Products in Data Processing (SAP) was established in Germany. The company's vision was to develop and standard application software for real-time business processing. Over the years, that small company has now developed into a multinational corporation providing business solutions all over 100 countries (Patel 2012, 27.)

SAP Business Warehouse (SAP BW) is the foundation store of SAP's strategic Enterprise Data Warehouse solutions. It leverages the corporate performance by providing reporting, analysis and interpretation of essential business data in a efficiently optimized process. Thanks to SAP BW, business data can be integrated, transformed and consolidated from SAP applicaion and external data sources.

### **Benefits of SAP**

The lengendary integration of corporate components is highlighted as SAP's one of greatest benefits.

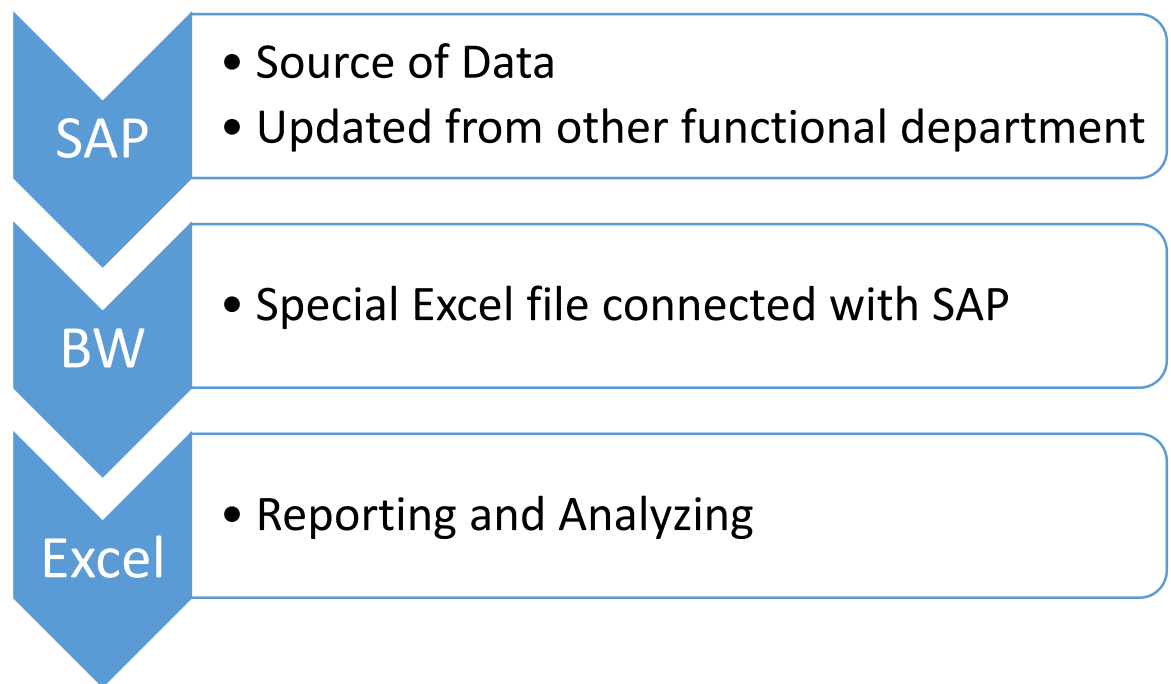
First of all, it provides corporations the opportunity to establish standardized business processes across branches, divisions, departments. Consistency in business processes allows organizations to enhance the development of productivity and operation of human resources. On the other hand, the operational efficiency is as well leveraged thanks to the elimination of data duplications, informational departmental handovers and so on. Since employee have access to the same database, it helps employees obtain necessary information and request and improves transparency in operation. (Patel 2012, 30.)

Secondly, SAP provides users to inetgrate business processes from manufacturing, logistic to sales etc. That generates insight operation information for accurate prediction regarding future costs, profit as pratically as possible. Additionally, the accuracy and timely reporting, which is one important responsibility of controlling department, is one significant benefit towards corporate operation. With a variety of standard reports and reporting tool, companies can easily design custom reports that generates consistent and accurate reporting in every operating level. (Patel 2012, 31.)

However, it is crucial to understand that there are also other critical factors that influences and maximizes SAP's benefits. For example: existing infrastructure, user training, management support, human resource issues etc... These and other similar factors can have direct or indirect impact on the SAP's offer to the corporations.

### 2.2.3 SAP and Excel Connectivity

Figure 7. SAP and Excel Connectivity



Corporate operating data is updated from sales, logistics and production department. Financial data is updated to SAP in the accounting department for controllers to analyze and report to the management level. Therefore, the analyzing and reporting activities only start after the 10<sup>th</sup> day of the month, after the accounting department have finished updated all of the information to the system.

The connectivity of SAP and Microsoft Office allows users to import data from SAP straight to MS Excel. On the other hand, users are able to interact with the transactions in SAP directly from the Excel spreadsheet. It has provided enormous benefits that helps corporation improve the organizational performance. SAP and Excel is connected via a file called SAP BW. It is also known as an Excel file that allows users to download data straight from SAP.

Together with Production/Logistics/Management department, the Accounting team also gains significant benefit to SAP and Excel connectivity. It helps both controllers and

managers easily keep track with performance and projects, storing and reporting data for budgeting purposes etc...

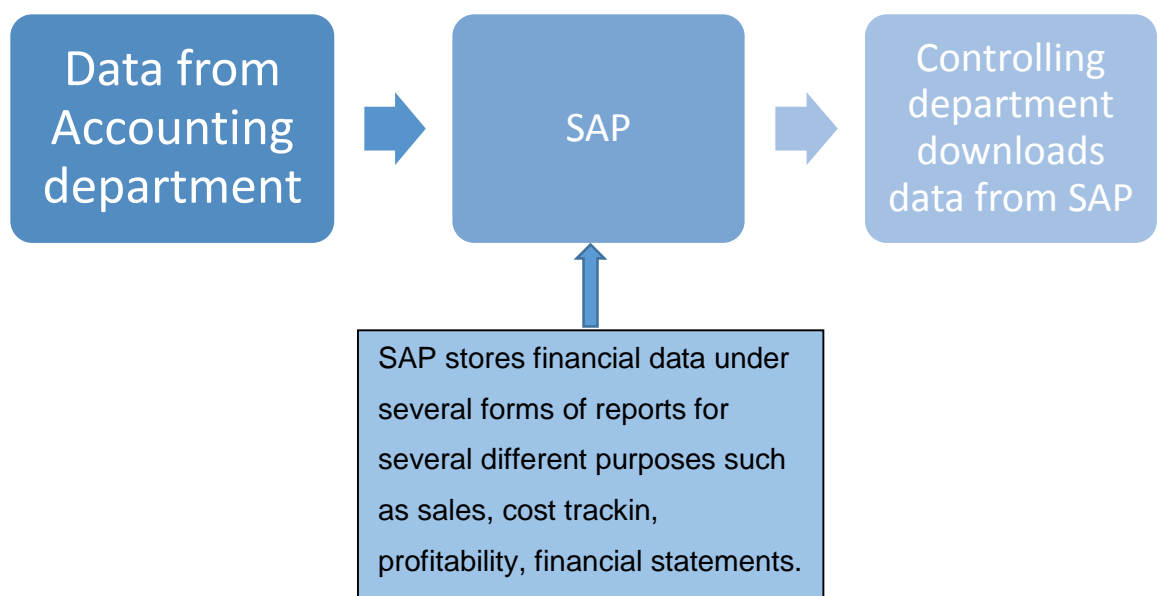
### 3 Controlling Activities at Bosch Rexroth

#### 3.1 General

At Bosch Rexroth Japan, fiscal year is also calendar starting from January and ending in December. There are one business plan which is established every August, and four other forecast report (CF) every three months (CF3, CF5, CF9 and CF11). Since CF11 is created in November, it is also considered as year-end report.

Sales reporting, profitability analysis and cost tracking are three main monthly activities at Bosch Rexroth Japan's controlling department. In order to maximize the efficiency in monthly activities, data for profitability analysis and cost tracking are generated into their own report form in SAP.

Figure 7. Data Flow



### 3.1.1 Terminology

Purposes of the **sales forecast** is not only to help managers estimate revenues to allocate appropriate resources and apply the right strategy, but also to track the company performance in the long run. One sales forecast can have strong impact on the entire organization and is therefore one of the most significant report besides the sales activity itself. Sales forecast in this document includes annual **business plan** and **quarterly forecast** figures.

According to Investopedia, fiscal year is defined as the period that organizations use for financial statement preparation or other accounting purposes. Companies may or may not have fiscal year as the same as the calendar year depending on their corporate activities (Investopedia 2015.)

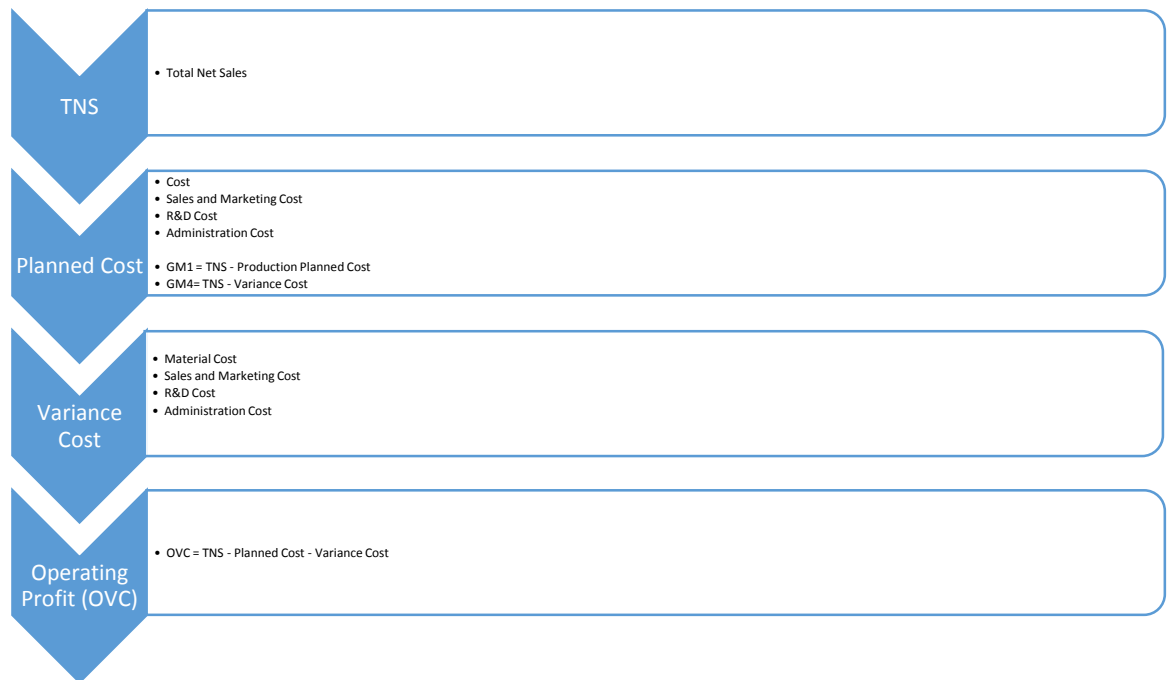
Financial statement refers to records that contain all activities of the company. It is created in order to present all the corporate financial information as clearly and concise as it can be. Financial statement includes income statement, balance sheet, reports regarding retained earnings and cash flow etc...At Bosch Rexroth, income statement play a major role in controlling activities. However, there is significant difference between Bosch Rexroth Japan's structure and IFRS ones.

### 3.1.2 BCO Structure

Bosch Rexroth Japan has established their own financial income statements that fits to their business purpose and demand. It is also known as Bosch Controlling report (BCO). Since it has been always essential for any company to create financial plan and comply with the efficient implementation, Bosch Rexroth chose this as one important part of their corporate strategy. This exclusive report structure, therefore, allows the company to focus on both planned cost and variance cost. Over the years, financial plan has been one of the most important annual responsibility supported by the BCO structure.

Sharing the similarities with the traditional financial income statements, BCO started with the total net sales (TNS) followed by operating cost and concluded with the operating profit. However, the operating cost in BCO is divided into two main types: the planned cost and the variance cost. Each type of cost includes production, sales and marketing, R&D and Administration Cost.

Figure 8. BCO Structure



This table above has illustrated the basic structure of BCO. Apart from other financial key figures such as TNS, operating cost, profit; there are also other financial evaluating figures such as Gross Margin 1 (GM1) also known as Gross Margin over Production Fixed Cost and Gross Margin 4 (GM4) also known as Gross Margin over Planned Cost.

### 3.2 Sales reporting

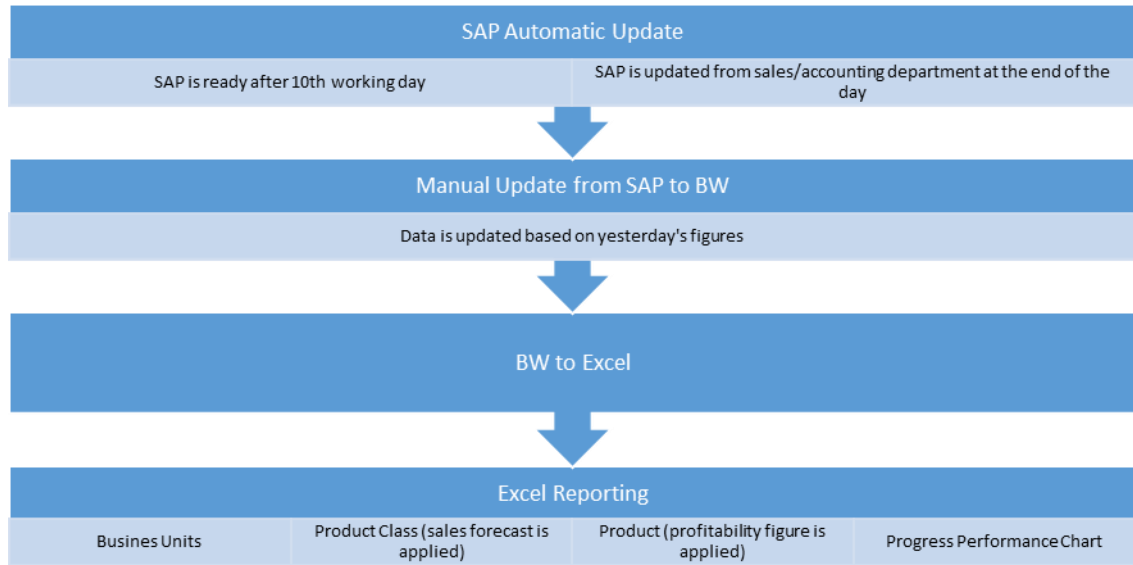
Sales reporting is handled within controlling department daily in order for management level to be well-informed with the business daily sales. It provides sales revenue for all the weekdays (both working day and non-working day). This is considered to be the best sales reporting solution in corporate strategy establishment due to its efficiency and accuracy.

Thanks to the data-driven measurement and evaluation provided by the sales reporting tool, improvement and appropriate activities can be done within short period of time. Firstly, the reporting tool allows users to check sales performance on different level from total sales of the corporation to business units, product class and individual product for any period of time. Secondly, sales reporting in DCJP always includes business plan and quarterly forecast figures. Therefore, sales at Bosch Rexroth is assured to be kept track daily in different level based on corporate objectives.

Sales statistics report is generated from SAP's daily updated raw data to see corporate sales achieved. In order for the statistics to be more visual and informative, the data is accumulatively shown with tables and progress charts on both daily and monthly basis.

It is crucial to create an efficient sales reporting file in order to minimize the reporting time daily. DCJP utilized SAP and Excel in order to perform the activity. Additionally, as mentioned, Excel is connected to SAP via BW. Sales statistics is generated from SAP's daily update. In order for the raw data from SAP to be visual and informative, it is imported to Excel through BW and shown with tables and progress charts.

Figure 9. Sales Reporting Process



There are many calculations required to be done to create quarterly forecast figures. The ratio forecast is used for different level from DCJP Total, PDCL to each individual product. Forecasting figures are all the time applied in order to keep track with the sales revenue in both product class and individual product levels. Regarding product class, quarterly forecasting figures is applied. On the other hand, profitability ratio is used for forecasting product on individual level. Profitability ratio is calculated by year-to-date figures product divided with total sales. By multiplying the ratio with the current actual sales, forecasting figure is reached.

Not only sales revenue reporting is essential to decision makers, it also generates a tremendous source of motivation for both sales and production departments. Additionally, sales data gives employees a complete understanding of corporate performance which leads to better awareness of their roles in business development (E-interactive 2007.)

### 3.3 Profitability Analysis

The purpose of this documentation is to analyse the profitability of DCJP financial performance on the product class and individual product level. Since SAP provides corporations the ability to fully customize framework for Profitability Analysis, it is easier to manage and analyse the contribution margin in departments, products and customers level. Additionally, it can as well give critical information in any criteria that is relevant to the business. Thanks to this helpful formation, corporations can not only put the focus more on profitable areas but also pay certain concentration on proving less profitable business areas (Patel 2012, 31).



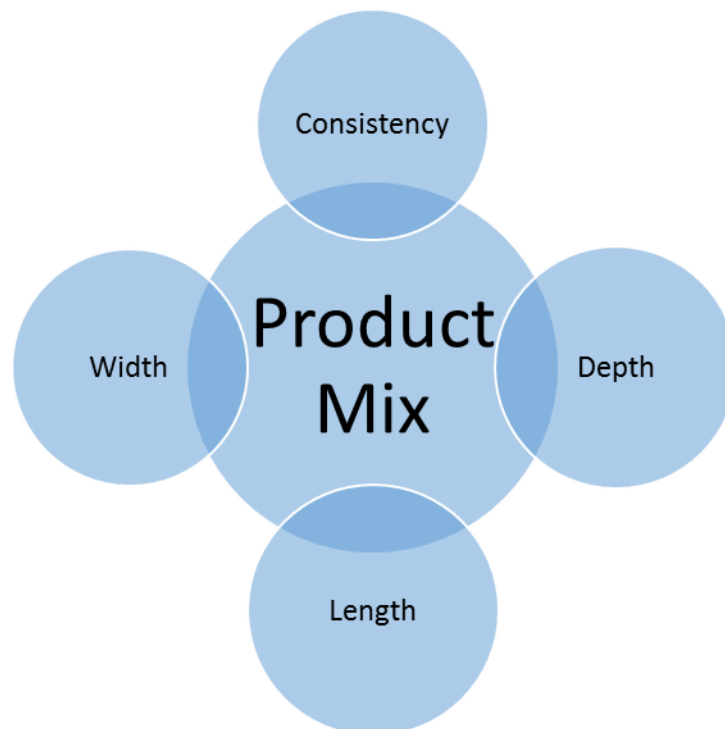
## Product Mix

Product Mix is also known as product assortment, which illustrates all of the products that the company offered for sales. In DCJP, product mix consists of several allied product class. Product class includes a number of similar or related products and services. They can share similarities regarding technology, channel used, target market, customers' demand or other aspects. The product under one product class can be referred as product item.

There are 7 main product classes in DCJP. Each product class is again divided into 2 sub classes based on their function and features (sub-class I and sub-class II) for more detailed analysis.

There are four important aspects in product mix, which are width, depth, length and consistency.

Figure 10. Product Mix



Width of the product mix is calculated by the number and the range of product class that offered by the corporation. It represents the level of diversity of corporate products based on their characteristics. On the other hand, the depth of the product mix is determined by the number of items in each product class. Length refers to the number of products in a product mix. Product mix consistency represents the relation from a product class to one

another according to their similarities. A corporate product mix can be consistent in production, distribution but different use (Small Business 2009.)

Profitability analysis is done based on both sub-class I and sub-class II with Total net sales, sales quantity, GM1 and GM4 figures. Total net sales data is updated SAP monthly. Together with total net sales, sales volume is also listed as one important factors in profitability analysis. Sales volume indicates the number of goods and service sold of the company during the period.

There are also other evaluating figures that helps decision makers have better understandings towards the complex data. All the time performance of the current month will be compared to the previous one in order to highlight both development and stagnation.

Profitability analysis provides a credible data-driven way to both keep the management level well-informed about corporate profitability but also create reliable information for future business plan and forecast.

### **3.4 Cost Tracking Management**

Cost tracking management is one important activity of the controlling department that occurs every month. The activity usually begins on the 5<sup>th</sup> to 7<sup>th</sup> working day of the month of the SAP closes and all the financial data is ready to be analyzed. Monthly expense of each department is taken to careful analysis from general to cost element level. Usually it takes approximately 3 to 4 days to update, analyze and report the department expense.

There are two main files for controllers to work on to perform cost tracking activities. They are called Database and Working Files.

#### **3.4.1 Database**

Database is where all of the raw financial data from SAP is stored during the fiscal year. Firstly, it is necessary to download the all the expense data from SAP. In order to establish the databse with sufficient updated data, controllers logs into SAP with transaction GR55 in order to download the report group. That is a group of reports which can be extracted to Excel in several different structure depending on users' purpose. In this situation, cost tracking template will be applied on the figures, in which information such as expense, cost center, cost element, fixed cost, variable cost, date, functional

areas (sales, production, administration etc...) and every other relevant details will be included.

Raw data from SAP will be processed with Macro Excel in order to separate fixed cost and variable cost. Processing raw data is one technical step which should be performed and double checked carefully. After that, all the downloaded information will be imported to the general yearly database file which includes all of the data from month to month.

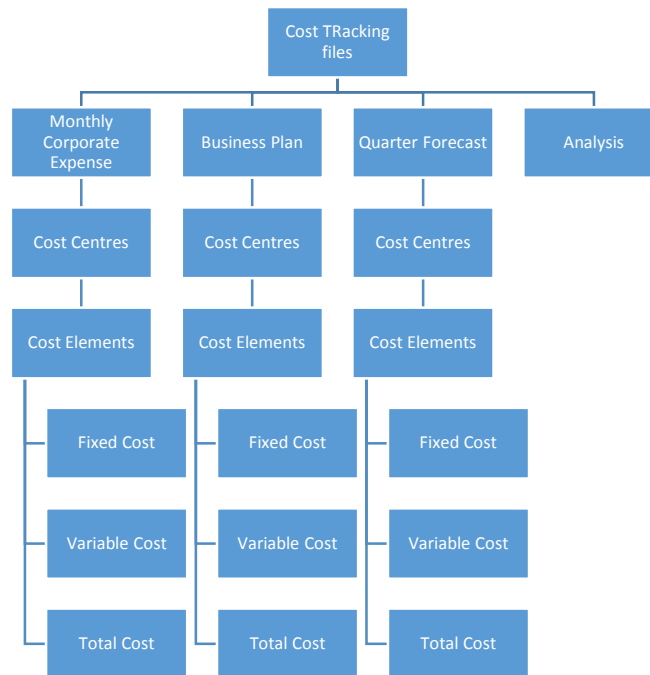
### **3.4.2 Working files**

Working file includes the cost tracking Excel files of all the corporate departments. Although different departments do not share similarities in cost centers or cost elements, it shares one unique template with formulas that has absolute consistency. The working files have strong connection to the database. With the formulas established, information from database will be reported in the working file accordingly. Consistency of formulas is very important in order to maximize the efficiency. With the consistency and accuracy, formulas can be applied to all departments from month to month without any manual changes.

Monthly expense reported in Cost Tracking file is covered in every level from general to details of every operating activities. It includes from personnel costs (insurance, salary, compensation, bonus), sales costs (trade fairs, commissions, packaging...) to other activities such as tax, R&D, logistics etc. Additionally, cost allocation is also applied to production cost in order to equally share it among all of the departments.

Apart from the monthly expense separated by fixed cost and variable cost, other aspects are also taken into account in cost tracking management. In order to well-track the outcome, business plan, forecast and other tracking figures such as year-to-date and still-to-go are also reported.

Figure 11. Cost Tracking Template



With this system, all of the corporate expense data is well-reported with sufficient information regarding from cost centers to cost elements. Monthly business plan and forecast figures allows controllers to easily track the expense and learn about suspicious expense that results in resilient solutions.

## **4 Discussion**

### **4.1 Key Findings**

It cannot be denied how an efficient controlling system can leverage corporate financial activities. Three prominent controlling activities have been highlighted with the practical examples from Bosch Rexroth's system. Together with academic knowledge and practical experience at the department, it can be concluded that the current system is very efficient in delivering useful financial figures regarding three important aspects: sales, expense and profitability.

Generally, it can also be concluded that SAP and Excel are the key roles in maximizing efficiency of controlling in corporation. It does not only minimize the working-time for reporting but also provide the data with accountable accuracy and consistency. Controllers are enabled to spare more time on other accounting tasks while data can be updated within short amount of time. For example, with the standard reports and reporting tools, Profitability Analysis and Cost Management reports are efficiently designed in order to minimize the data analysing process every month. More importantly, SAP has succeeded in improving financial transparency in the company with the ability to store one single version of data and to drill-down from consolidated statements to the associated information.

In the sales reporting responsibility, sales performance has been reported to management level daily immediately after just one working day. Every aspect from product level (business units, product classes, individual product) to comparison with business plan/quarter forecast have been carefully taken into account. It provides management level one efficient data-driven evaluating and tracking tool that results in better corporate decision-making process. At the end of the year, reported sales data becomes great asset for company when creating business plan for the next coming year.

Along with tracking sales revenue data, profitability analysis is also one critical activity towards corporate controlling. Therefore, the company has also successfully established the SAP-Excel system that allows decision-makers to see all the aspect of corporate performance regarding revenue, quantity to other financial evaluating figures. Thanks to the monthly update, company's profitability performance is well-managed.

Cost tracking manage system has successfully delivered expense data that allows management level keep track with the original plan. With the accuracy and consistency

due to efficient Excel and SAP system, controllers saves a certain amount of time managing and tracking operational cost from corporate to department level.

## **4.2 Recommendation**

### **4.2.1 Cost of Goods Sold Vs. Cost of Goods Manufactured**

For this time being, the current system has been reported to be taken to mere cost of goods sold and discard change in inventory, which is the difference between cost of goods sold and cost of goods manufactured.

While BCO report illustrates the expense from all of the goods sold, the expense in Cost Tracking is covered all of the manufactured goods cost. Therefore, it is also critical to take the change in inventory into consideration. In order to do that, in cooperation with Bosch Rexroth's controllers, the author has established an Excel tool in order to report and analyse the change in inventory figures.

Since there are different reports depending on working purposes, cost tracking system and Bosch controlling system requires two different reports. And their difference is, as mentioned, the change in inventory.

First of all, in order to highlight the difference, data from two report needs to be downloaded and reported in the same format. At this step, Excel will be a great tool to utilize. The difference will be shown under the difference in cost element. As long as the cost element in change inventory is traced out, company can keep track with the total expense of all manufactured cost.

Secondly, due to the large amount of raw data. It is significant to assure the accuracy when importing raw data into the working format by constantly compare Excel figures with original SAP figures. Once the change inventory created in Excel matches with the real difference, controllers can begin to analyse all the cost elements in the change inventory.

### **4.2.2 Relationship between Revenue, Cost and Profitability**

Bosch Rexroth Japan has successfully established a tool based on Excel and SAP to control income, expense and the profitability. However, there will be always room for improvement and development. Perceiving the strong connection among the sales revenue, operating cost and profitability, the author acknowledged that it will leverage the controlling performance to the next level if the relationship among those three aspects are analysed carefully every month.

By analysing the relationship between revenues, expense and profitability analysis; Bosch Rexroth can seize the opportunity to see how they influence each other and in what way they will generate the most profitable impact.

Figure 12. Relationship among Revenues, Expense and Profitability



However, it is also very challenging when it comes to combine those three financial aspects into one Excel File due to massive data of a worldwide corporation. At this point, it is suggested to establish its own report form in SAP in order to have only selective relevant data. That will prevent the final storage from massive redundant financial data.

#### **4.3 Personal Learning**

While the internship has delivered the opportunity to apply school theoretical knowledge into practical experience, the research-based thesis allowed the author to review not only all of the learnings but to develop critical thinking competence towards the current system for future improvement. As mentioned, the accounting career development process begins with the understanding and familiarity towards the system, continues to influencing the existing system. As the proficiency and understanding will develop in time, one will likely to design his or her own system. The thesis has been one valuable opportunity for the author to experience the whole journey from understanding to evaluating improvement to the case company.

Along with expertise development, profundity of knowledge about accounting management is also broadened and deepened. The author, therefore, gets better image about the future career development. On the other hand, the outcome of the research is a great asset to personal resume.

## **5 Feedback from Company**

In General, the thesis explains well a way of controlling, taking a practical example of Bosch Rexroth Corporation (Bosch Rexroth Japan). It has met the goal as to be the guideline for future interns as well as given controlling department the opportunity to see the system from another point of view (Oki 15 September 2015.)

However, conclusion or suggestion of the author could be discussed more long if the author's aim is to bring a suggestive opinion for an improvement in the Commissioning Party. For example, the author could add one more case study from generally known examples in order to contrast advantages and disadvantages in Bosch Rexroth Japan with those in other companies. In most of the cases, it is not easy to bring a general conclusion from only one case study (Oki 15 September 2015.)



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